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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,748	12/18/2001	Stanley Joel Osher	03.002	9133

27194 7590 06/27/2005

HOWREY SIMON ARNOLD & WHITE, LLP
c/o IP DOCKETING DEPARTMENT
2941 FAIRVIEW PARK DRIVE, SUITE 200
FALLS CHURCH, VA 22042-2924

EXAMINER	
COUSO, JOSE L	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/039,748	OSHER ET AL.	
	Examiner	Art Unit	
	Jose L. Couso	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5-30* is/are rejected.

7)☒ Claim(s) *2-4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Applicant's arguments with respect to claims 1 and 5-30 have been considered but are moot in view of the new ground(s) of rejection.

2. Claims 20-26 and 28-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 20-26 and 28-30 are drawn to a method that merely manipulates data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application in the technological arts.

In order for a claimed invention to accomplish a practical application, it must produce a "useful, concrete and tangible result" *State Street,* 149 F.3d at 1373, 47 USPQ2d at 1601-02 (see MPEP 2106.II.A). A practical application can be achieved through recitation of "a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan", or "limited to a practical application within the technological arts" (MPEP 2106 IVB2(b)). Currently, claims 20-26 and 28-30 meets neither of these criteria. In order to for the claimed method to produce a "useful, concrete and tangible" result, recitation of one or more of the following elements is suggested:

- The manipulation of data that represents a physical object or activity transformed from outside the computer (MPEP 2106 IVB2(b)(i)).

- A recitation of a physical transformations outside the computer, for example in the form of pre or post computer processing activity (MPEP 2106 IVB2(b)(i)).
- A direct recitation of a practical application in the technological arts (MPEP 2106 IVB2(b)(ii)).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 5-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Burt et al. (U.S. Patent No. 4,906,940).

With regard to claim 1, Burt describes computing a numerical approximation to at least one of the slope, curvature, and/or another predetermined geometric feature, and storing the numerical approximation together with data values prescribed at certain predetermined locations (refer for example to column 8, lines 2-52); applying a suitable compression technique to the geometric feature (refer for example to column 15, lines 1-28); and retrieving the image (refer for example to column 15, line 45 through column 16, line 16).

As to claim 5, Burt describes wherein the retrieving step is carried out by numerically solving an elliptic differential equation using a source term derived from a

compressed version of the elliptic operator applied to the image, where appropriate boundary conditions are stored and used (refer for example to column 16, lines 17-50).

In regard to claims 6 and 20, Burt describes a gradient module configured to receive the surface data and generate a gradient signal (see figure 8, elements 806 and 808), a compression module configured to receive the gradient signal and generate a compressed signal (see figure 8, element 802); and a reconstruction module configured to decompress the compressed signal to recover the gradient signal as a reconstructed signal (see figure 8, element 824).

With regard to claims 7 and 15, Burt describes a module configured to store the compressed signal (see figure 8, element 812).

As to claims 8 and 16, Burt describes a module configured to transmit the compressed signal (see figure 10, element 1004).

In regard to claims 9 and 17, Burt describes configured to operate in cooperation with a processor-based computer system (see figure 1 and refer for example to column 4, line 59 through column 5, line 41).

With regard to claims 10, 18 and 26, Burt describes wherein the surface data comprises digital terrain elevation data (refer for example to column 5, lines 9-11).

As to claims 11, 19, 27 and 30, Burt describes an input/output channel in communication with avionics equipment and configured to provide elevation data to the avionics equipment generated from the reconstructed signal (refer for example to column 5, lines 3-11).

With regard to claims 12, 14, 21 and 29, Burt describes an integration module configured to generate reconstructed surface data from the reconstructed signal (see figure 10, element 1006).

In regard to claims 13 and 28, Burt describes a first gradient module configured to receive the surface data and generate a first gradient signal (see figure 8, element 806); a second gradient module configured to receive the surface data and generate a second gradient signal (see figure 8, elements 808); a compression module configured to receive the second gradient signal and generate a compressed signal (see figure 8, element 802); and a reconstruction module configured to decompress the compressed signal to recover the second gradient signal as a reconstructed signal (see figure 8, element 824).

With regard to claim 22, Burt describes wherein at least one of the steps of generating the gradient of the signal and generating the integrated signal is carried out by a numerical process (as discussed for example in column 16, lines 17-50).

In regard to claims 23 and 25, Burt describes wherein at least one of the gradient and the integrated signal is generated to within a predetermined level of accuracy (as discussed for example in column 16, lines 17-50).

With regard to claim 24, Burt describes wherein at least one of the steps of generating the gradient of the signal and generating the integrated signal is carried out by analytically (as discussed for example in column 16, lines 17-50).

5. Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chan et al. and Farmer both disclose systems similar to applicant's claimed invention.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose L. Couso whose telephone number is (571) 272-7388. The examiner can normally be reached on Monday through Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso, can be reached on (703) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the USPTO contact Center whose telephone number is (703) 308-4357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jlc
June 14, 2005

JOSE L. COUSO
PRIMARY EXAMINER